

CLAIMS:

1. A method of setting a quality level of an output image of a media frame by a media processing application, comprising the steps of:

determining an amount of resources to be used for processing the media frame;
controlling the quality level of the output image based on

- i. relative progress of the media processing application calculated at a milestone,
- ii. a maximal quality level that is possible to choose for the output image,
- iii. a previously used quality level of an output image, and
- iv. a maximum quality level based on the number of received layers

2. The method of claim 1, wherein the quality level is chosen based on a minimum of the highest quality level possible for processing the next frame and a highest quality level required to maintain the quality of the output image.

3. The method of claim 1, wherein:

the step of controlling the quality level of the media frame is modeled as a Markov decision problem comprising a set of states, a set of decisions, a set of transition probabilities, and a set of revenues;

solving the Markov decision problem to derive an optimal strategy; and

determining the number of layers of the media frame that are decoded based upon this solution.

4. The method of claim 3, further comprising the steps of:

defining the set of states to comprise the relative progress of the media processing application at a milestone and the previously used quality level;

defining the set of decisions to comprise a plurality of quality levels that the media processing application can provide;

defining the set of transition probabilities to comprise a probability that a transition is made from a state of the set of states at a current milestone to an other state of the set of states at a next milestone for a given quality level of the plurality of quality levels; and

defining the set of revenues to comprise a positive revenue related to a quality level of the media frame, a negative revenue related to a deadline miss and a negative revenue related to a quality level change.

5. A system to set a quality level of an output image of a media frame by a scalable media processing application, the system comprising:

determining means to determine an amount of resources to be used for processing the media frame;

controlling means to control the quality level of the output image of the media frame based on -

- i. relative progress of the media processing application calculated at a milestone,
- ii. a maximal quality level that is possible to choose for the output image of the media frame, and
- iii. a previously used quality level of an output image of a media frame, and
- iv. a maximum quality level based on the number of received layers.

6. The system of claim 5, wherein the quality level chosen is further based on a minimum of the highest quality level possible for processing the next frame and a highest quality level required to maintain the quality of the output image.

7. The system of claim 5, wherein, the controlling means is further configured to: model the control of the quality level of the media frame as a Markov decision problem comprising a set of states, a set of decisions, a set of transition probabilities and a set of revenues;

be a solution to the Markov decision problem using a decision strategy; and
set the quality level of the media frame based upon this solution.

8. The system of claim 7, wherein:

the set of states comprises the relative progress of the media processing application at a milestone and a previously used quality level of a previous media frame;

the set of decisions comprises a plurality of quality levels that the scalable media processing application can provide;

the set of transition probabilities comprises a probability that a transition is made from a state of the set of states at a current milestone to another state of the set of states at a next milestone for a given quality level of the plurality of qualities; and

the set of revenues comprises a positive revenue related to a positive quality level of the media frame, a negative revenue related to a deadline miss and a negative revenue related to a quality level change.

9. A computer program product designed to perform the method according to claim 1.
10. A storage device comprising a computer program product according to claim 9.
11. A television set comprising a system according claim 5.
12. A set-top box comprising a system according claim 5.